



Enogen® from Syngenta®

Our Path to Connected Services

Presented by **Mark Sather, PMP**
Enogen Project Lead



Our Path to Connected Services

- Who is Syngenta, and What is Enogen?
- What is in the Enogen Value Chain?
- Using PI to Prove Value, Build Trust
- Need for Flexibility – Connected Services
- Benefits – External and Internal Stakeholders

Syngenta is -



Syngenta Corporate Profile

HQ - Basel, Switzerland

28K Employees

90 Countries

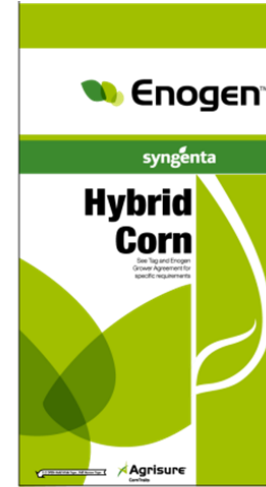
Enogen[®] technology is a key strategic initiative focused on growth in sales of North American corn products.

Enogen is also a key component of the Syngenta commitment to sustainability.



Enogen[®] Technology is -

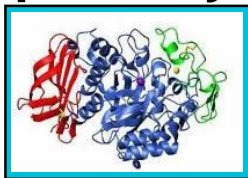
- Fully deregulated corn trait
- First commercialized corn “Output” trait
- Specifically for the dry grind ethanol industry
- Contains an alpha-amylase enzyme



Enogen Key Concept

Optimized delivery of alpha-amylase enzyme directly in corn feedstock.

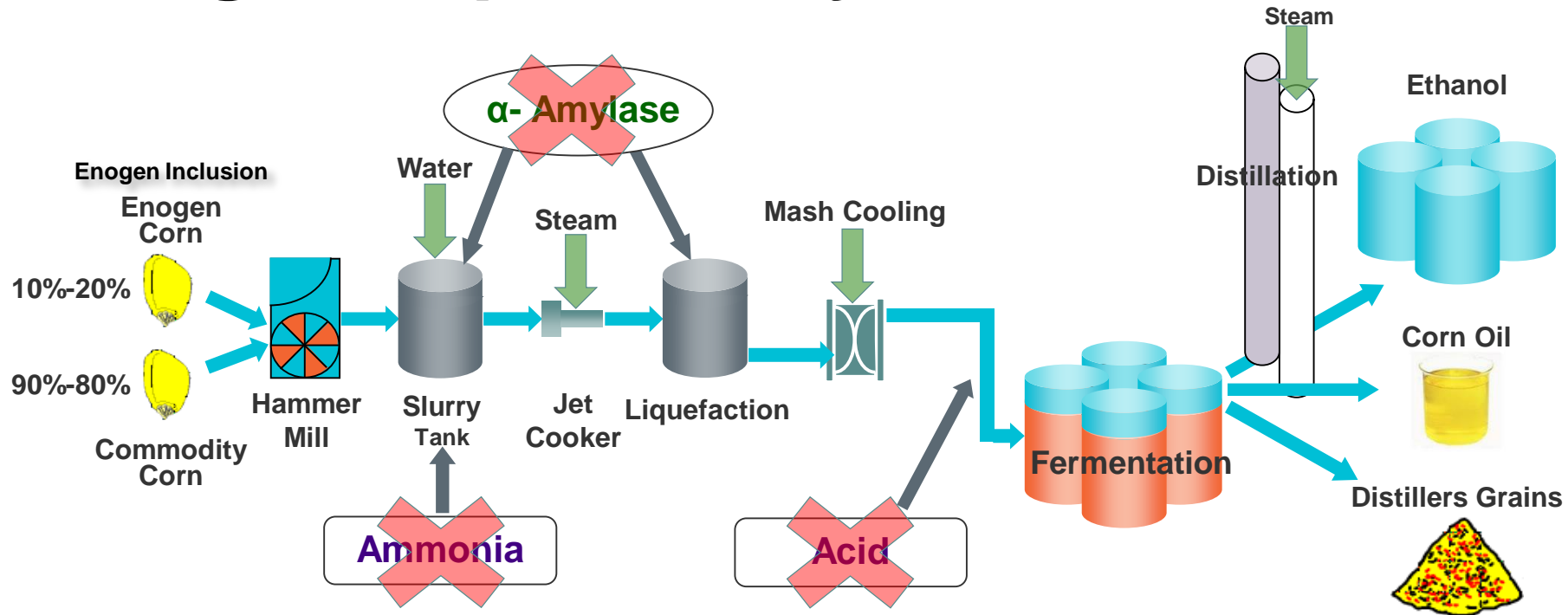
alpha-amylase



Enables

Ethanol Process Efficiency

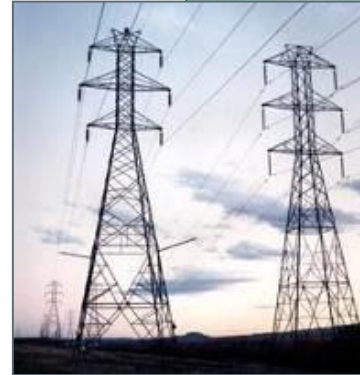
Enogen Impact – Dry Grind Ethanol



PI provides the ability to monitor, analyze, measure and visualize the Enogen impact.

More Value Drivers

- Reduced energy and water
- Reduced chemical usage
- Increased throughput
- Increased yield potential
- Reduced maintenance
- Finding more



<http://www.syngenta.com/country/us/en/agriculture/seeds/corn/enogen/Pages/enogen-home.aspx>

Look for the Quad County Corn Processor
Video

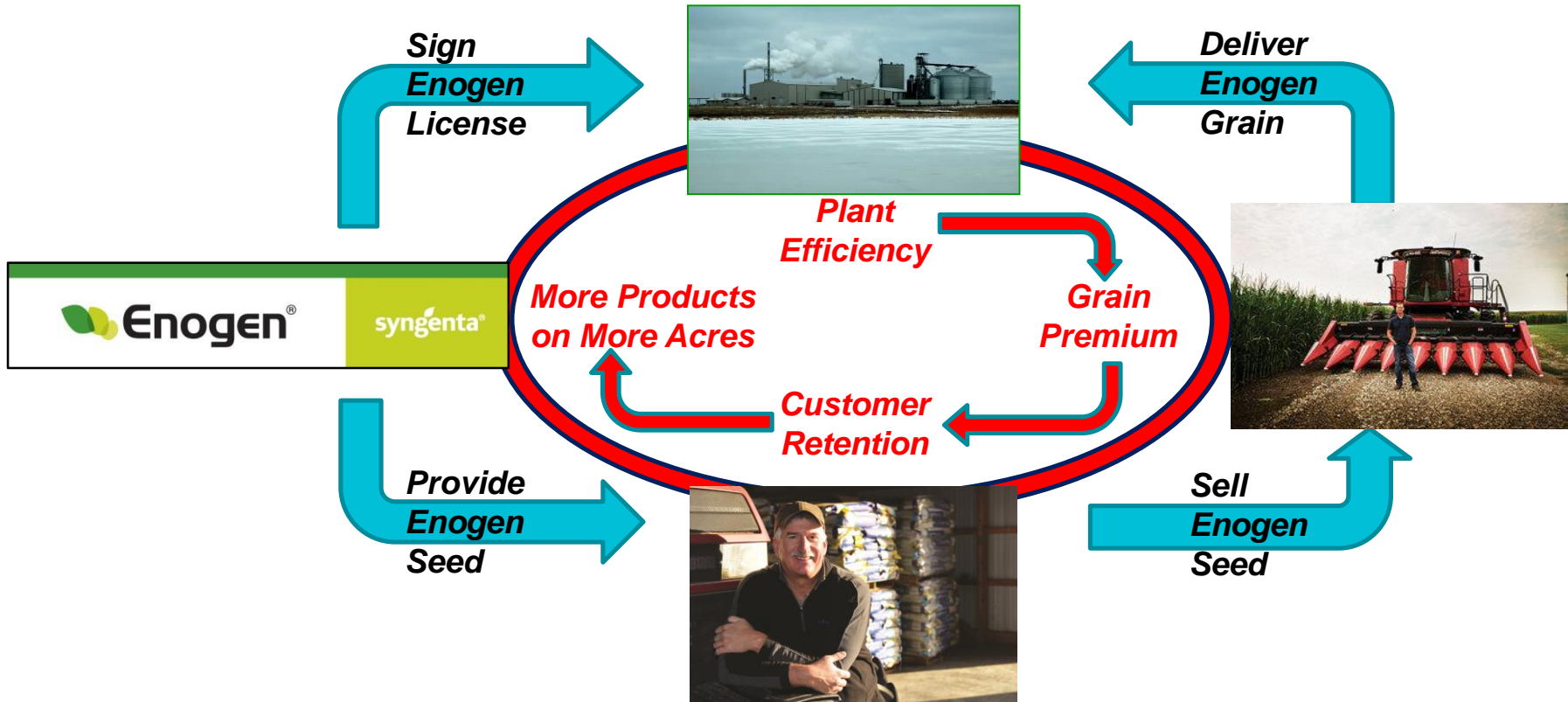
Key Points – Enogen in Action

Work with the
Enogen Team
That's us!



- Reduced Viscosity
- Process Changes
- Energy Savings
- Grower Payments
- Decreased Cost
- Increased Profitability

The Enogen Value Chain



What is the key value point?

Efficiency at the Ethanol Plant

How do we establish this value?

It is based on Data!

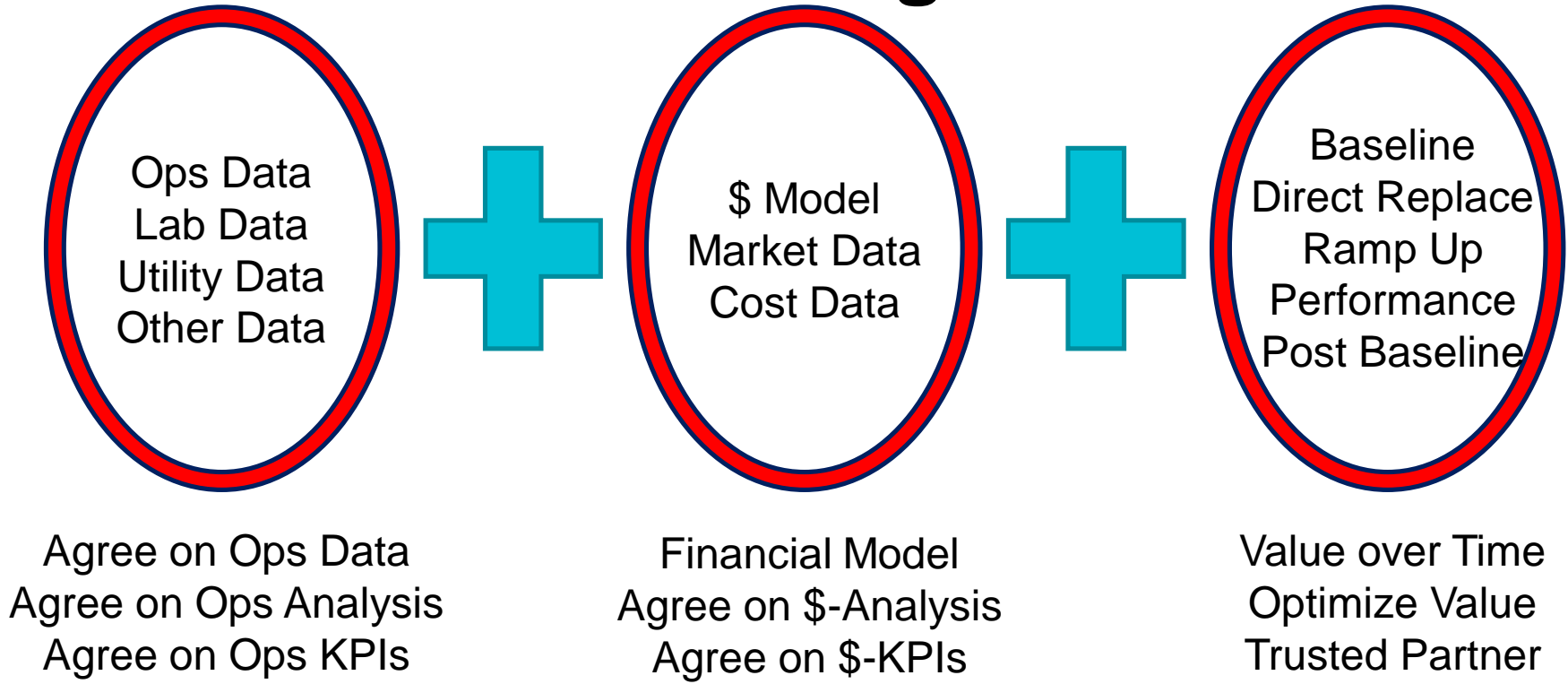
How do we get there?

Agreement on the data definitions

Agreement on data measurements and KPIs

Build trust – Ethanol plant and the Enogen team

Documenting Value



Key PI Implementation Processes

Plant Info &
Preparation

Install Plant
Interfaces

AF Model &
Deployment

Tag
Binding

Validation

Business
Adoption

- Plant assessment to capture details
- Install at plant and PI Connected Services in Azure
- Model data using PI AF, bind tags and validate
- Business adoption – reports and visualization

Come to our Industry Day session tomorrow for the details.

Now, the Enogen Team has:

- All plant data in one place
- Metrics Spreadsheets, using PI DataLink
- Visual Trending, using PI Coresight
- Visual Performance, using PI ProcessBook
- Remote Visual Monitoring, using PI Coresight
- Real-time Monitoring, using PI Notifications

Our Plant Partners ask:

Can we get that too???

Some of their challenges:

- Need to be on-site to work with data
- Merge data from many sources
- Difficult to identify and visualize trends
- Legacy “hidden formulas”
- Length of time to generate performance metrics

Results – Difficult to make data driven decisions.

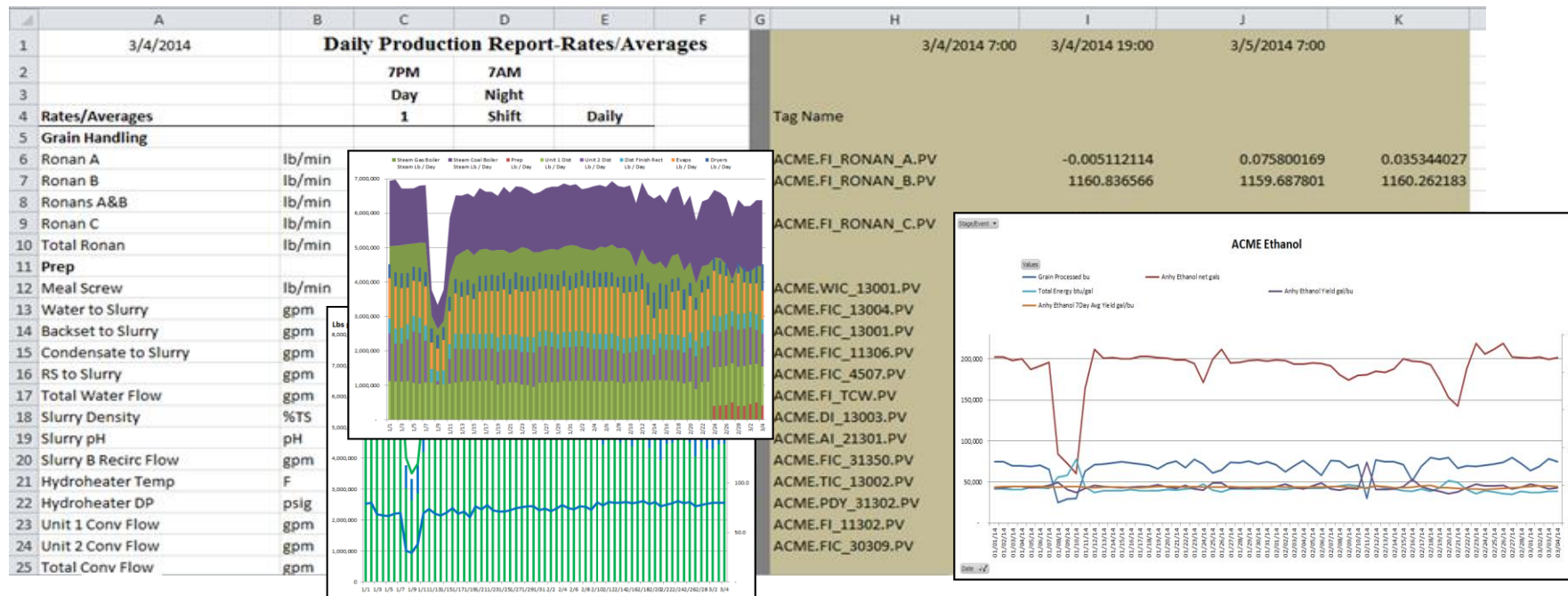
Example – Using PI Coresight

Tracking, Monitoring and Troubleshooting Enogen Inclusion Rate



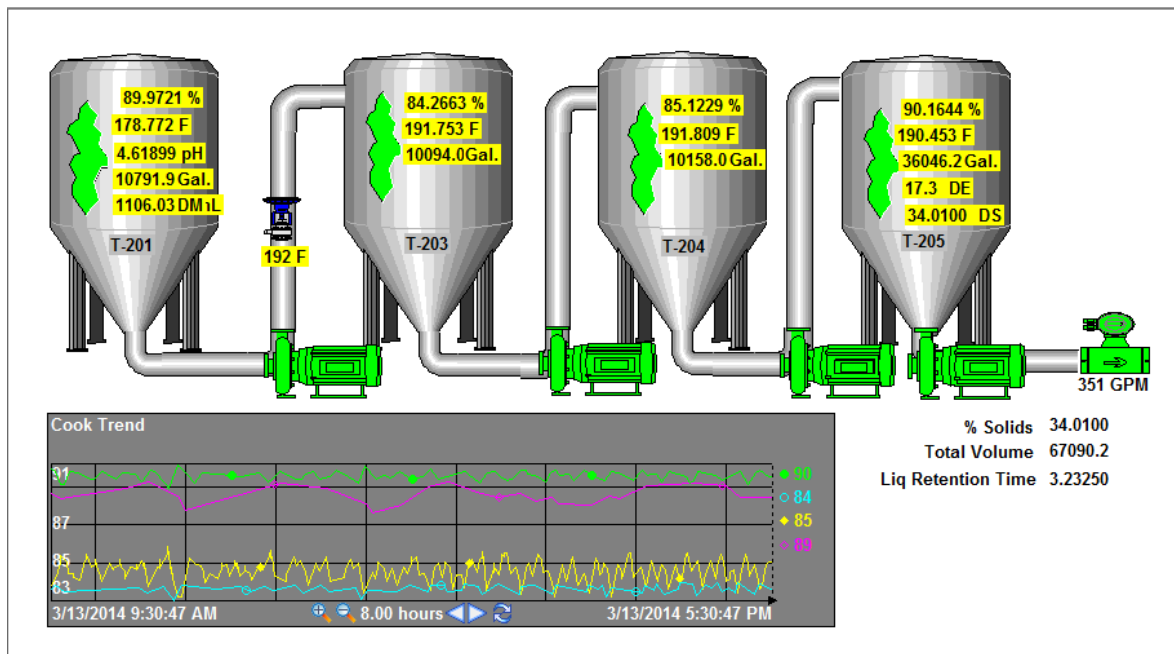
Example – Using PI DataLink

Automated Daily Production Reports



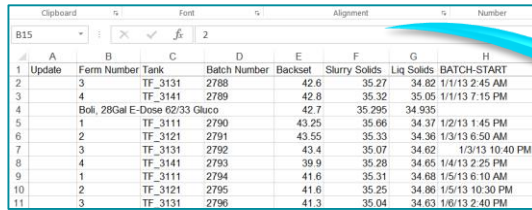
Example –PI ProcessBook

Monitoring Level, Temperature and Retention Time across multiple tanks



Adding Data To Process PI Event Frames

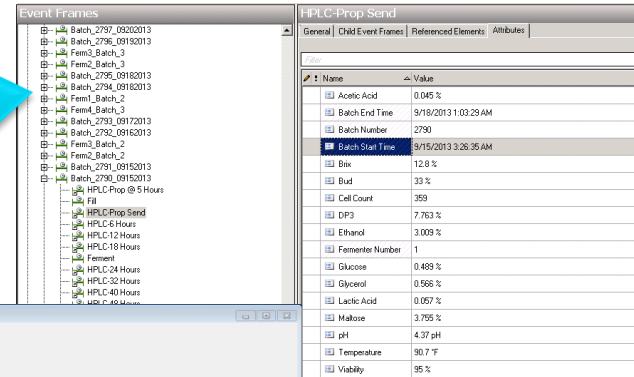
- Reconcile Non-Process Data to Process Event Frames



	A	B	C	D	E	F	G	H
1	Update	Form Number	Tank	Batch Number	Backset	Slurry Solids	Liq Solids	BATCH-START
2	3	TF_3131	2788	42.6	35.27	34.82	1/1/13 2:45 AM	
3	4	TF_3141	2789	42.8	35.32	35.05	1/1/13 7:15 PM	
4		Boli, 28Gal E-Dose 62/33	Glucos	42.7	35.295	34.935		
5	1	TF_3111	2790	43.25	35.66	34.37	1/2/13 1:45 PM	
6	2	TF_3121	2791	43.55	35.33	34.36	1/3/13 6:50 AM	
7	3	TF_3131	2792	43.4	35.07	34.62	1/3/13 10:40 PM	
8	4	TF_3141	2793	39.9	35.28	34.65	1/4/13 2:25 PM	
9	1	TF_3111	2794	41.6	35.31	34.68	1/5/13 6:10 AM	
10	2	TF_3121	2795	41.6	35.25	34.86	1/5/13 10:30 PM	
11	3	TF_3131	2796	41.3	35.04	34.63	1/6/13 2:40 PM	

Excel Data

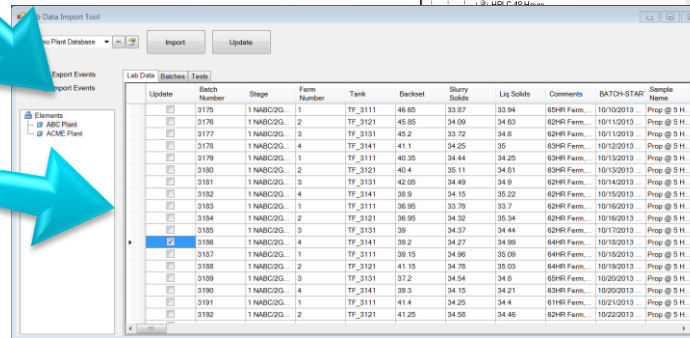
To Event Frames



General	Child Event Frames	Referenced Elements	Attributes
Name			
Value			
Batch 2797, 06/20/2013			
Batch 2796, 09/12/2013			
Fem3_Batch_3			
Fem2_Batch_3			
Batch 2795, 09/12/2013			
Batch 2794, 09/12/2013			
Fem3_Batch_2			
Fem2_Batch_2			
Batch 2793, 09/12/2013			
Batch 2792, 09/12/2013			
Batch 2791, 09/12/2013			
Batch 2790, 09/12/2013			
HPLC-Prop @ 5 Hours			
HPLC-Prop Send			
HPLC-6 Hours			
HPLC-12 Hours			
HPLC-18 Hours			
Fement			
HPLC-24 Hours			
HPLC-30 Hours			
HPLC-40 Hours			
HPLC-60 Hours			



LIMS Database



Update	Batch Number	Stage	Form Number	Tank	Backset	Slurry	Liq Solids	Comments	BATCH-START	Sample Name
	3175	1 NABCQG	1	TF_3111	46.65	33.87	33.94	62HR Fem.	10/10/2013	Prop @ 5 H.
	3176	1 NABCQG	2	TF_3121	45.85	34.09	34.63	62HR Fem.	10/11/2013	Prop @ 5 H.
	3177	1 NABCQG	3	TF_3131	45.2	33.72	34.8	62HR Fem.	10/11/2013	Prop @ 5 H.
	3178	1 NABCQG	4	TF_3141	41.1	34.25	35	62HR Fem.	10/12/2013	Prop @ 5 H.
	3179	1 NABCQG	1	TF_3111	40.35	34.44	34.25	62HR Fem.	10/13/2013	Prop @ 5 H.
	3180	1 NABCQG	2	TF_3121	40.4	35.11	34.81	62HR Fem.	10/13/2013	Prop @ 5 H.
	3181	1 NABCQG	3	TF_3131	42.05	34.49	34.9	62HR Fem.	10/14/2013	Prop @ 5 H.
	3182	1 NABCQG	4	TF_3141	36.9	34.15	35.22	62HR Fem.	10/15/2013	Prop @ 5 H.
	3183	1 NABCQG	1	TF_3111	36.95	33.78	33.7	62HR Fem.	10/16/2013	Prop @ 5 H.
	3184	1 NABCQG	2	TF_3121	36.95	34.32	35.34	62HR Fem.	10/16/2013	Prop @ 5 H.
	3185	1 NABCQG	3	TF_3131	39	34.37	34.44	62HR Fem.	10/17/2013	Prop @ 5 H.
	3186	1 NABCQG	4	TF_3141	39.2	34.27	34.99	64HR Fem.	10/18/2013	Prop @ 5 H.
	3187	1 NABCQG	1	TF_3111	39.15	34.06	35.09	64HR Fem.	10/18/2013	Prop @ 5 H.
	3188	1 NABCQG	2	TF_3121	41.15	34.78	35.03	64HR Fem.	10/19/2013	Prop @ 5 H.
	3189	1 NABCQG	3	TF_3131	37.2	34.54	34.8	62HR Fem.	10/20/2013	Prop @ 5 H.
	3190	1 NABCQG	4	TF_3141	39.3	34.15	34.21	62HR Fem.	10/20/2013	Prop @ 5 H.
	3191	1 NABCQG	1	TF_3111	41.4	34.25	34.4	61HR Fem.	10/21/2013	Prop @ 5 H.
	3192	1 NABCQG	2	TF_3121	41.25	34.58	34.46	62HR Fem.	10/22/2013	Prop @ 5 H.

Connected Services – Customers

Provides flexibility:

- Be able to extend PI solutions to our plants
- Build our relationship
- Become trusted partner
- Enogen Service Model

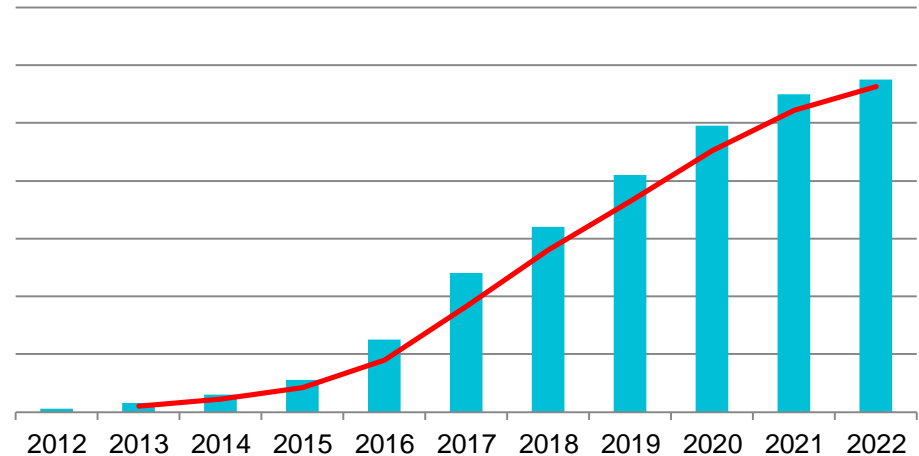


Connected Services - Internal

Match the Enogen Business Plan:

- Grow PI at the same as we add plants
- Predictable strategic planning

Enogen Business Plan



Connected Services Partnership

- Gained common understanding of goals
- Considered PI options
- Successfully executed, effective January 1, 2014
- Piloting implementation
- Developing Enogen Service Model

Summary - Interesting Journey

Enogen Challenge:

- New Strategic Product
- Complex Value Chain
- Optimize Product Value
- Need a Strategic Tool
 - Data, Analysis, KPIs

PI Value:

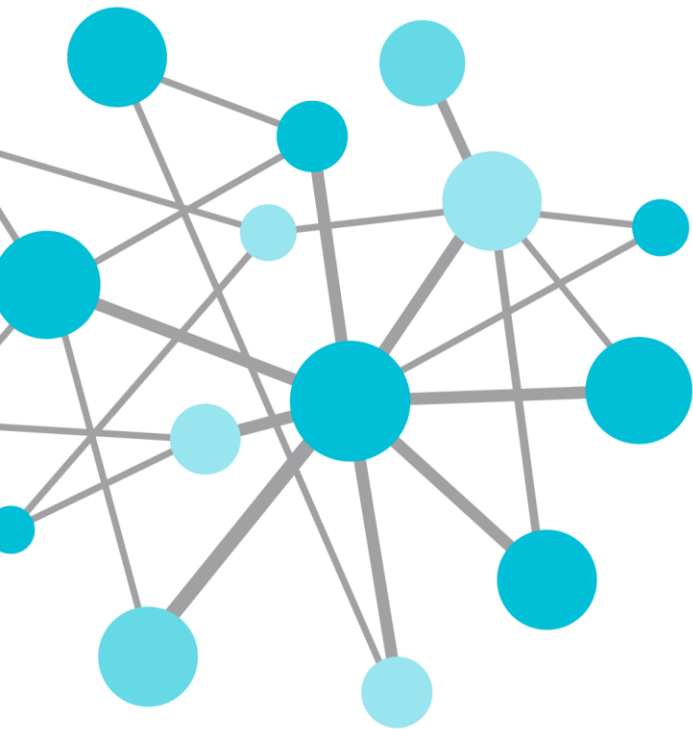
- Extend our Services
- Common Understanding
- Data Driven Decisions
- Full Partnership
 - Built on Data
 - Built on Trust

Additional Resources

Information Links:

- www.enogen.net
- www.syngenta.com
- Contact:
 - Mark Sather, PMP
 - Mark.Sather@Syngenta.com
 - Project Lead, Enogen

©2014 Syngenta. Enogen®, the Alliance Frame, the Purpose Icon and the Syngenta logo are trademarks of a Syngenta Group Company.



THANK
YOU

Brought to you by  **OSI**soft.